

I claim:

1 1. An integral actuator, comprising:
2 a frame constructed and arranged for securing an actuator
3 motor having an output shaft, having a first at least partially
4 closed chamber for receiving said output shaft, a bearing
5 support for supporting a driven member, and at least a partially
6 enclosed second chamber, and a passage connecting said first
7 chamber with said second chamber;
8 an actuator motor with a power output shaft, secured to
9 said housing such that said power output shaft extends into said
10 first chamber;
11 a control circuit mounted in said second chamber, said
12 control circuit having circuitry for selectively transferring an
13 externally supplied electrical power, through said passage, to
14 said actuator motor; and
15 a power translation member connected to said output shaft.

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1 2. An integral actuator according to claim 1, further
2 comprising a cover secured to said frame such that said second
3 chamber is substantially fully enclosed.

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1 3. An integral actuator according to claim 2, further
2 including a control circuit located in said first chamber, and a
3 plurality of conductors extending through said cover, arranged
4 such that when said cover is secured to said frame at least one
5 of said plurality of conductors makes electrical contact with
6 said control circuit.

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1 4. An integral actuator according to claim 2 wherein said
2 cover is removably secured.

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1 5. An integral actuator according to claim 3 wherein said
2 cover is removably secured.

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1 6. An integral actuator according to claim 4 wherein a
2 structure of said frame associated with said second chamber
3 includes at least one flexible clip receptacle, said cover
4 includes at least one flexible clip, and wherein said cover is
5 secured to said frame to form said substantially enclosed second
6 chamber by said at least one flexible clip engaging with said at
7 least one flexible clip receptacle.

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1 7. An integral actuator according to claim 2, wherein said
2 second chamber includes a support structure, and further
3 comprises a control circuit supported by said support structure,
4 wherein said control circuit is secured by a surface of said
5 second chamber and by said cover.

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1 8. An integral actuator according to claim 2, wherein said
2 cover includes a receptacle support for receiving an external
3 connector, and a plurality of pins extending through said cover
4 in alignment with said receptacle support, and wherein said
5 control circuit includes electrical contacts, constructed and
6 arranged such that when said cover is secured to said frame said
7 pins contact said electrical contacts.

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1 9. An integral actuator according to claim 2, wherein said
2 cover includes a receptacle support for receiving an external
3 connector, and a terminal clearance hole extending through said
4 cover in alignment with said receptacle support, and wherein
5 said control circuit includes electrical conducting members
6 extending in direction such that when said cover is secured to

7 said frame said electrical conducting members extend through
8 said terminal clearance hole.

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1 10. An integral actuator according to claim 2, wherein said
2 cover includes a connector through hole, and further comprising
3 a connects extending through said through hole, said connector
4 including a receptacle support for receiving an external
5 connector, and a plurality of pins extending, each having an
6 external connection terminal above a surface of said cover and
7 an internal connection below said surface, said wherein said
8 control circuit includes electrical contacts, constructed and
9 arranged such that when said cover is secured to said frame said
10 internal connection points contact respective ones of said
11 electrical contacts electrical.

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1 11. An integral actuator according to claim 8, wherein said
2 second chamber includes a support structure, and further
3 comprises a control circuit supported by said support structure,
4 wherein said control circuit is secured by a surface of said
5 second chamber and by said cover.

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1 12. An integral actuator according to claim 9, wherein said
2 second chamber includes a support structure, and further
3 comprises a control circuit supported by said support structure,
4 wherein said control circuit is secured by a surface of said
5 second chamber and by said cover.

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13. An integral actuator according to claim 10, wherein said second chamber includes a support structure, and further comprises a control circuit supported by said support structure, wherein said control circuit is secured by a surface of said second chamber and by said cover.